

CLAIMS

1. A system for embedding additional information in video data comprising:
 - (1) means for detecting a video frame in video data;
 - (2) means for extracting data for a small domain from said detected video frame and for buffering said data;
 - (3) means for embedding additional information in said buffered small domain without changing the length of the video data stream; and
 - (4) means for returning said small domain, in which said additional information has been embedded, to said video data.
2. The system according to claim 1, wherein said video data is MPEG video data.
3. The system according to claim 2, wherein said video frame is an intra-macroblock of an I-frame or of a P or B-frame.
4. The system according to claim 3, wherein said means (3) for embedding said additional information includes:
 - (3a) means for detecting a DC factor in said buffered small domain;
 - (3b) means for determining whether the bit length of said DC factor will be unchanged even when said additional information has been embedded; and
 - (3c) means for, when said bit length will be unchanged, embedding said additional information in said buffered small domain.
5. The system according to claim 4, wherein said means (3) for embedding said additional information further includes:
 - (3d) means for, when said bit length will be changed, determining whether 1/2 of said additional information can be embedded, and for, when embedding is feasible, embedding said 1/2 of said additional information in said small domain.
6. The system according to claim 5, wherein said additional information is an embedding pattern obtained using a pseudorandom number.
7. The system according to claim 6, wherein said small domain is one macroblock domain (16 ? 16 pixels).
8. A system for detecting additional information in video data, comprising:
 - (1) means for detecting a video frame in video data;
 - (2) means for extracting data for a small domain from said video frame that is detected, and for buffering said data; and
 - (3) means for detecting additional information in said small domain that is buffered.
9. A method for embedding additional information in video data comprising the steps of:
 - (1) detecting a video frame in video data;
 - (2) extracting data for a small domain from said detected video frame and buffering said data;
 - (3) embedding additional information in said buffered small domain without changing the length of the video data stream; and

(4) returning said small domain, in which said additional information has been embedded, to said video data.

9. A method for embedding an electronic watermark in an MPEG stream comprising the steps of:

- (1) detecting an intra-macroblock of an I-frame or a P or B-frame in an MPEG stream;
- (2) extracting data for one macroblock from said MPEG stream and buffering said data when said intra-macroblock of said I-frame or said P or B-frame is detected;
- (3) embedding an embedding pattern in said buffered macroblock without changing the length of VLC; and
- (4) returning said macroblock, in which said embedding pattern has been embedded, to said MPEG stream.

10. A method for detecting additional information in video data, comprising the steps of:

- (1) detecting a video frame in video data;
- (2) extracting data for a small domain from said video frame that is detected, and buffering said data; and
- (3) detecting additional information in said small domain that is buffered.

11. A method for detecting an electronic watermark in an MPEG stream, comprising the steps of:

- (1) detecting an intra-macroblock of an I-frame or a P or B-frame in an MPEG stream;
- (2) extracting data for one macroblock from said MPEG stream and buffering said data when said intra-macroblock of said I-frame or said P or B-frame is detected; and
- (3) detecting a pattern that is embedded in a DC factor in said macroblock that is buffered.

12. A system for controlling the copying of digital data, comprising:

- (1) means for detecting CCI in input data;
- (2) means for, when said CCI is detected, detecting ECCI in said input data;
- (3) means for, when said ECCI is detected, inhibiting the copying of the digital data; and
- (4) means for, when said ECCI is not detected, permitting the embedding of said ECCI in said digital data and the copying of the resultant digital data.

13. A storage medium on which a program for embedding additional information in video data, said program comprising:

- (1) a function for detecting a video frame in video data;
- (2) a function for extracting data for a small domain from said detected video frame and for buffering said data;
- (3) a function for embedding additional information in said buffered small domain without changing the length of the video data stream; and
- (4) a function for returning said small domain, in which said additional information has been embedded, to said video data.

14. A storage medium for storing a program for detecting additional information in video data, said program comprising:

- (1) a function for detecting a video frame in video data;
- (2) a function for extracting data for a small domain from said video frame that is detected, and for buffering said data; and

All a 7